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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/849,886 | 05/04/2001 | Yoshihide Kinbara | Q64212 | 9968 |

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| EXAMINER |
|---|
| PADGETT, MARIANNE L |

| ART UNIT | PAPER NUMBER |
|---|---|
| 1762 | |

DATE MAILED: 05/21/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. 09/544,886 | Applicant(s) Kimbara |
|---|---|---|
| | Examiner M.L. Padgett | Group Art Unit 1762 |

*—The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address—*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

☒ Responsive to communication(s) filed on 2/27/03.

☒ This action is **FINAL.**

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle,* 1935 C.D. 1 1; 453 O.G. 213.

**Disposition of Claims**

☒ Claim(s) 1-9, 11-21 + 23-26 is/are pending in the application.

Of the above claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 1-9, 11-21 + 23-26 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claim(s) _____ are subject to restriction or election requirement

**Application Papers**

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. § 119 (a)-(d)**

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119 (a)-(d).

☐ All ☐ Some* ☐ None of the:

☐ Certified copies of the priority documents have been received.

☐ Certified copies of the priority documents have been received in Application No. _____.

☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a))

*Certified copies not received: _____.

**Attachment(s)**

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☐ Notice of Reference(s) Cited, PTO-892

☐ Notice of Informal Patent Application, PTO-152

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Other _____

**Office Action Summary**

1. Claims 1-9 and 11-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Applicant's amendments have clarified previously discussed 112 issues, however for the method claims the changes have created a discrepancy, such that the preamble as now represented by lines 1-5 (marked-up version) are not commensurate in scope with the steps in the body of claim 1. Note that the preamble is directed to a "discharge processing method" where the "subject" is suppose to be processed by the discharge, however there are NO discharging steps in the body of the claims, which as written would appear to read on a process for molding a film on a surface via pressure only, so that lines 6-13 (marked-up) have no clear relationship to the discharge process of the preamble. When, if ever, does any discharging take place?

Also, in the process, the "thin film" described, does not have a clear end purpose. Is it intended to be deposited on the subject, or is it just describing the shape of the processing medium between electrode and surface being treated? Note this uncertainty is irrelevant to the apparatus claims, as a method limitation. The tin film will be treated in its broadest possible interpretation.

In claim 1, last 3 lines, the controlling limitation is unclear in that it is uncertain exactly what the parameters to choose from are. Is the "contract area..." one of the parameters or a description of what the parameters apply to? Are there 3 or 4 species of parameters? Use of standard Markush group terminology would clarify this phrasing.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to

a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. The abstract and the full translation of Jp 62-009822 to Hidekiko Maebata et al have potential discrepancies, in that the abstract says the process is directed to providing metal deposition/removing function when it polishes a substrate and the full translation says it's a metal elution/removal operation, but does not clearly teach where the metal is eluted from, i.e., the electrode or the substrate being polished. As the process is termed an "electrolytic composite polishing method" that effects "elution/removal", this says that these are two distinct subsprocesses that are part of the overall polishing process, so while elution can be a form of removal, it is implied to be different from the taught removal. The polishing process produces a mirror surface with an even maximum roughness, in which the taught elution/removal technique is employed. The removal is clearly removing from the surface to be finished, but the elution site is ambiguous, because in order to fofull the taught results, one could use metal elution to transfer metal from the electrode and deposit so as to fill in the roughness, or to remove material to contribute to the wearing down of the surface. The latter would seem to be included by the "removal" option, thus not contribute to being a composite process, but the teachings could be intended to distinguish between removal by abrasion and by elution, so called a composite, however then it would have been more logical to call it an elution/abrasion process of polishing the surface by removal. In the full translation, see p. 1 (claims and field); page 3; pages 5-6 bridging paragraph + next; p. 7; p. 8-9 bridging paragraph + next (pressing pressure and resulting change in roughness); p. 11, where it is noted that the most detail discussion is directed to the abrasion aspect of the process, while the electrolytic is given minimal discussion, so that the above question on where the elution is coming from, plus what the exact mechanistic effect of the electrolytic process is suppose to be, is not answered, thus the reference could be considered to read on either option, especially with secondary reference(s) to give details for

electrode function of an option, such as deposition from eluted metal. For the above reasons and due to the amendments to the claims, the 102 over Hitachi (62-9822A) is overcome, however while the claims potentially imply coating or the ability to cause coating (apparatus), it is not clear that any coating or deposition ever take place, or what if anything, except a film of processing medium is represented by the claimed "thin film".

4. Claims 1-3, 12-19, 22 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hitachi (Hidehiko Maebata et al or JP 62-009822), optionally in view of HEI 8-300227A (Saito et al or Shingijyutsu).

The Hitachi reference is discussed above and in Paper No. 3, sections 3, 4 and 5, and Saito et al in section 4. It is further noted that the full translation has no further discussion on the fluids or liquid used in Hitachi et al, however as previous by noted Figure 4, as well as 7 and 8, show the electrode assembly being pressed into the substrate, and a processing fluid is supplied to the interface, so that it is between the electrode and substrate surfaces, and would inherently form a film that may be described as a "thin film", because the abrasion surface of the electrode assembly is pressed against the substrate, thus limiting the space available for the fluid to be present. The paragraph bridging p. 8-9 of the full translation defines the gap at this interface and is taught to be kept constant, with a "pressing pressure P" defined, with its relationship to the "viscosity coefficient" taught as important. Page 9 continues discussion of these features.

While Hitachi has no discussion of a "thin film" formed by the processing fluid, it would have been obvious to one of ordinary skill in the art, that as the fluid is supplied to the gap or interface (equivalent to that claimed by applicant), that its shape as distributed in the gap would be the claimed thin film. The thickness of this film is not discussed as being controlled, however the gap is controlled as described on p. 8-9, as related to claimed pressure, and discussed

viscosity coefficient, hence in controlling the gap, it is clear that the thickness of the processing fluid therebetween is also controlled. Note if applicants intend some different meaning for the "thin film" than applied in this rejection, the claims as presently written are lacking, i.e., claims describe only a shape of the processing fluider medium, which is consistant with that which would be expected from the configuration of Hitachi.

Note that the abrasive material can be considered a layer or coating on the electrode, so part thereof, such that Hitachi need not be combined with other references for these claims, or alternately one can note in the prior art discussion (p. 2 full translation) that electrolytic polishing without an abrasive surface was previously known, and would presumably use like overall configurations, which may also be illustrated by Saito et al (fig. 13), who perform electrolytic surface processing (discussed section 4, paper # 3), and as taught on pages 6, p. 9-10 [0017-0018]; p. 12 [0024] may be used for deposition in a processing solution. On p. 14, paragraph [0027] appears to indicate that the surface of the processing material was polished by the discharge process of Saito et al. From these teachings, it would have been farther obvious that the polishing process of Hitachi, whether or not one uses an insulating layer to enable abrasive contact, to further the polishing effort of effect, would have been expected to be effective.

Note that as claimed the discharge between the electrode and subject, requires physical separation by a gap (with fluid therein) that prevents touching or an insulating coating on one surface, otherwise the process would not work because one would have created an electrical short, hence inorder to read the claims in light of their claimed function, one can not exclude the insulating layer of Hitachi as being part of the electrode structure.

5. Claims 20-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hitachi (and optionally Saito et al) as applied to claims 1-3, 12-19, 22 and 24 above, and further

in view of Saito et al, as applied in section 4 of paper # 3. In the full translation of Saito et al, see p. 9-12 for compression molding.

6. Claims 4-5, 7 and 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hitachi, optionally in view of Saito et al as applied to claims 1-3, 12-19, 22 and 24 above, and further in view of HEI – 6-210,517 to Takahashi, as applied in section 6 of paper # 3. Also see full translation.

7. Claims 11 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hitachi, optionally in view of Saito et al as applied to claims 1-3, 12-19, 22 and 24 above, and further in view of Sakanishi (JP 63-306826A) as applied in section 8 of paper # 3. Also see full translation.

8. Claims 25-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hitachi, optionally in view of Saito et al as applied to claims 1-3, 12-19, 22 and 24 above, and further in view of Magara et al (JP 10-128,620A). Also see full translation.

9. Applicant's arguments filed 2/27/03 and discussed above have been fully considered but they are not persuasive.

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

11. Any inquiry concerning this communication should be directed to M L. Padgett at telephone number 703-308-2336 on M-F from about 8:30 am – 4:30 pm, and FAX # (703) 872-9311 (after final) or 305-6078 (informal).

M. L. Padgett/mn 5/19/03
May 20, 2003

MARIANNE PADGETT
PRIMARY EXAMINER